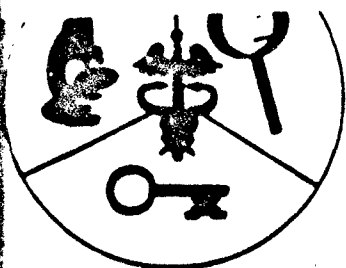


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DIRECTORATE OF
HEALTH CARE STUDIES
AND CLINICAL INVESTIGATION

APPLYING THE DEPARTMENT OF HEALTH
AND HUMAN SERVICES UNDERSERVED AREA
CRITERIA TO ARMY DENTAL FACILITIES

James A. Lalumandier, LTC, DC

Jay D. Shulman, COL DC

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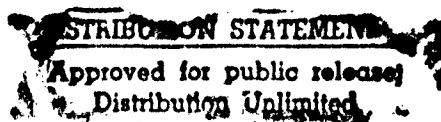
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19. ABSTRACT (continued)

The DHHS underserved criteria can be applied to Army dental facilities to assist in identifying dental manpower shortage areas. Also important is the determination and verification of the number of Delta Dental Plan providers within 35 miles of a family member's residence.

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EXECUTIVE SUMMARY

At the request of the Chief, Army Dental Corps the Dental Studies Division of the Health Care Studies and Clinical Investigation Activity (HCSCIA) planned and executed a study to determine which DENTACs and standalone clinics are underserved with respect to family member dental treatment.

To determine whether the Department of Health and Human Services' (DHHS) underserved criteria could be applied to Army dental facilities, a systematic approach was followed. Phase I required all DENTACs to provide their best estimates of their population to civilian dentist ratio using 1974 dentist per county data and 1970 population data. Sixteen DENTACs/clinics reported population to dentist ratios of at least 3,000 per civilian dentist. When 1990 census data and 1987 dentist per county data were applied to the Phase I results 12 DENTACs/clinics were underserved by DHHS criteria.

The DHHS underserved criteria can be applied to Army dental facilities to assist in identifying dental manpower shortage areas. Also important is the determination and verification of the number of Delta Dental Plan providers within 35 miles of a family member's residence.

Background

Access to Care

As resources allocated to family member dental care in Health Services Command (HSC) decrease, civilian dental care under the Dependent Dental Plan (DDP) will become an increasingly necessary alternative. While there is little doubt that there are sufficient dentists in metropolitan areas to support increasing family member enrollment in the DDP, Dental Activity (DENTAC) commanders in rural areas have expressed concern about the ability of dentists in the surrounding communities to meet the demand for care.

Shortage Area Designations

The earliest health manpower shortage area designations were mandated in 1965, by the Health Professions Education Assistance Amendment (Public Law 89-290).¹ This law provided for the cancellation of portions of outstanding Health Professional Student Loans obtained by dental students in return for their service after graduation in areas found to have shortages. The Act also applied to students in schools of medicine, osteopathy, or optometry, and was based on county practitioner-population ratios. By 1971, the Comprehensive Health Manpower Training Act (Public Law 92-157)² expanded to provide not only for cancellation of loans made by the government, but also for government repayment of student loans incurred from other sources. It not only continued to make the Secretary of HEW responsible for developing criteria for shortages but also for actually designating shortage areas. One year prior to the 1971 Loan Repayment Act Congress passed the Emergency Health Personnel Act (Public Law 91-623)³ creating a new unit, the National Health Services Corps (NHSC) to provide health professionals to shortage areas. The first list of designated Critical Health Manpower Shortage Areas was assembled, and together with the

¹United States Department of Health, Education, and Welfare. Health Professions Education Assistance Program: Report to the President and the Congress. Washington, D.C.: Government Printing Office, 1970.

²Comprehensive Health Manpower Training Act of 1971. Statutes at Large. Public Law 92-157, Nov. 18, 1971. 92nd Congress: 85: 431-63.

³Emergency Health Personnel Act of 1970, Statutes at Large. Vol 84, (1971).

shortage criteria was published in the Federal Register on October 23, 1974.⁴ By 1975, the (designation & activity) was transferred from NHSC to the Bureau of Health Manpower (BHM) within the Department of Health and Human Services (HHS). A revision of the criteria for health manpower shortage area designations appeared in the Federal Register⁵ by 1976. The final rule was published in the Federal Register on November 17, 1980 (Appendix A).⁶

Shortage Area Criteria

The criteria for health manpower areas are stated separately in the Federal Register for each of seven manpower types: (1) primary medical care manpower, (2) dental manpower, (3) psychiatric manpower, (4) vision care manpower, (5) podiatric manpower, (6) pharmacy manpower, and (7) veterinary manpower. The basic criteria for the dental manpower are the geographic area under consideration and the population to dentist ratio. For dental manpower, the area under consideration is determined by a 40 minute drive. In mountainous terrain or in areas with only secondary roads, a 40 minute drive translates into 20 miles. Under normal conditions with primary roads available that distance increases to 25 miles. In flat terrain, or in areas connected by interstate highways, the driving distance is 30 miles. Natural barriers such as rivers and/or mountains may also impact on the distance one can travel in 40 minutes. The second criterion, can be determined by dividing the population by the number of full-time equivalent (FTE) private practitioners. The population is determined from the total permanent resident civilian population of the area, using census data. Adjustments to that population for seasonal residents and/or migratory workers may be included using a weighing scheme. The number of dental practitioners is determined by counting all non-federal dentists providing patient care. Where appropriate data are available, full-time equivalent dentist counts are used by utilizing age of dentist or hours spent in the dental practice.

⁴Department of Health, Education, and Welfare. Public Health Service, Federal Register, vol 39, no. 206 (23 October 1974).

⁵RC Lee, "Designation of health manpower shortage areas for use by Public Health Service programs," Public Health Rep Vol. 94, (1979 Jan-Feb): 48-59.

⁶Health manpower shortage areas. Criteria for designation of areas having shortages of dental manpower. Federal Register vol 45, no. 23: 76003-5 (17 Nov 1980).

Department of Health and Human Services Methodology

The methodology was developed in November 1977 and published in a report entitled "Report on Development of Criteria for Designation of Health Manpower Shortage Areas".⁷ Department of Health and Human Services (DHHS) first calculated the population per dentist per county throughout the United States. Population figures per county were derived from 1974 Bureau of Census estimates. The number of licensed dentists in each county was calculated using 1974 data then adjusted using age-specific productivity data obtained from a national survey of licensed dentists, carried out in 1969-1970. The population per dentist ratios by county were then rank-ordered. The median population to dentist ratio was 3,239:1. An approximate median was determined to be 3,000:1, and was chosen to indicate an adequate level of dental care, 150% of the median was 4,858:1 and the analysis of this ranking showed that the lowest quartile was 5,159:1. The value of 5,000:1 was chosen to indicate shortage, on the basis of the above values for 150% of the median and the lowest quartile.

The area for the delivery of dental care was determined to be a 40 minute commute from the population center. According to a study, "Public Acceptance of Prepaid Group Practices", completed at the University of Michigan in 1967, 92% of all dental patients travel less than 40 minutes (one-way) to the dentist. Since the study indicated that most dental care is carried out on an advance appointment basis rather than on the immediate or next-day basis, DHHS used a 40 minute travel time. Although DHHS used 150% of the median ratio to indicate physician and dentist shortage, the travel time to a physician's office was reduced to 30 minutes because the time and distance to a physician's office was presumed to be more of a factor for medical care than dental care.

Updated Methodology

In developing updated criteria it was important to be conservative when computing travel time for dental care while updating the population to dentist ratio. Using DHHS criteria the largest geographic area included a 30 mile radius from the population center of post. Only natural barriers, such as rivers or mountains, precluded using a 30 mile radius. Looking at the second criterion, i.e., population dentist ratio, DHHS used data

⁷Bureau of Health Manpower. (1977). Report on development of criteria for designation of health manpower shortage areas (BHM/OPD/MAB, Report No. 78-03). Hyattsville, MD: Department of Health and Welfare.

that was approximately 20 years old. In order to update the ratio, 1987/1988 data represented the most current figures for population per dentist, we were able to collect data only at the state level. The statewide population per dentist ratios were rank-ordered to determine the new median population to dentist ratio, i.e., 1,920:1. Since DHHS determined that 150% of the median indicated shortage area, the new shortage ratio was calculated to be 2,880:1. We conservatively set the cut-off point at 3,000:1. A DENTAC or free-standing Army dental clinic would only be considered potentially underserved when its ratio of population to dentist was at least 3,000:1. In order to focus on the DENTACs and free-standing clinics that were underserved, we made first-order approximation of the population and number of civilian dentists within 30 miles of each post using data provided by the DENTACs. This first stage resulted in 16 DENTACs/Clinics reporting a population of at least 3,000 per civilian practitioner (Table 1).

Next, we applied a more precise population to dentist ratio to the 16 DENTACs/Clinics that remained in the analysis. The Bureau of Census was able to provide exact 1990 population figures for a 30 mile radius of map coordinates. Using the coordinates of the center of population on post, the total population of the area was captured along with a population breakdown per county. The Regional Census Offices were able to give county populations for states within their region. We acquired the most recent county-level dentist reports (1987/1988) for each county within the circumscribed areas from the Bureau of Economics and Behavioral Research, American Dental Association. For each county the number of FTEs was calculated as follows: each private practitioner working 30 hours or more was counted as 1 FTE while a practitioner working less than 30 hours was counted as .75 FTEs. Full-time equivalent calculations were accurately noted for counties completely within the 30 mile radius. For counties partially within the circle it was assumed that dentists would be distributed according to population. By calculating the proportion of people living in the county within the circle, an equivalent proportion of FTEs was assumed to be practicing within that portion of the county. The total FTEs were then summed for each circumscribed area. The population to dentist ratio of Phase II was calculated by dividing total area population minus active duty soldiers by the total FTEs within 30 miles of post. From this second step the only estimation was the number of active private practitioners within the circumscribed area. Nonetheless we had narrowed the potential shortage areas to 12 (Table 2).

Although the DENTAC at West Point was far below the shortage criteria, the Hudson River and Catskill Mountains, impacted on the distance one can drive in 40 minutes. Phase III required the

12 DENTACs/Clinics plus Fort Huachuca⁸ to make a very thorough search of their circumscribed areas noting the number of private practitioners and their specialties. A form was provided to each of the 12 DENTACs/Clinics to fill out indicating the number and specialty of each practitioner by county within 30 miles of the post (Appendix B). Due to the natural barriers around West Point, the West Point DENTAC commander elected to determine the area for the delivery of dental care by a 40 minute travel time from post. After he had determined the geographic area, Health Care Studies and Clinical Investigation Activity (HCSCIA) used census tract maps of 1990 census data and determined the exact population of the area. The New York Regional Census Office provided population figures per tract to make calculations as accurate as possible.

Phase III resulted in the most accurate ratio of population per dentist (Table 3). By subtracting out the active duty soldiers from the total population the resultant number represented potential patients for the private practitioners within 30 miles of post. The number of dentists were the active private practitioners in private practice within 30 miles of post. Without a dental insurance plan for family members of active duty soldiers, Table 3 would have represented the best guide for determining which DENTAC and/or clinic should be deemed underserved.

Dependent Dental Plan

The present Delta⁹ contract runs through 31 July 1995. Delta is responsible for developing and maintaining participating dentist¹⁰ who are able to provide dental services to beneficiaries, i.e., active duty family members. The beneficiary must be able to access care for a routine appointment within 21 calendar days from a participating provider whose office is within 35 miles of the family member's residence. If

⁸Fort Huachuca, Arizona, had undercounted their surrounding population in Phase I.

⁹Delta is the name of the program which administers the Dependent Dental Plan for the Office of Civilian Health and Medical Program of the Uniformed Services.

¹⁰Participating dentists are paid by Delta Dental less any cost share. Payment for services is based upon the dentist's usual fees notwithstanding Delta's customary charge. For preventive services, e.g., diagnostic, emergency palliative, or prophylaxis, there is no cost sharing by the beneficiary. For restorative services the cost share is 20% to be paid by the beneficiary.

those two conditions cannot be met, Delta is obliged to pay the usual fee, less the 20% cost share¹¹ for restorative services, of any nonparticipating provider located within 35 miles of the beneficiary's residence.

Nonparticipating providers are dentists who have not signed on with Delta. Payment for services to this category of provider is usually determined by Delta at a level not less than the 50th percentile of the prevailing fees (or at the actual charge if lower) with any remaining amount paid by the beneficiary. These dentists are either nonparticipating providers accepting assignment or nonparticipating providers who practice in states that do not allow assignments of benefits. The states that permit nonparticipating providers to be paid directly by insurance companies (accepting assignment) are Alaska, Alabama, Georgia, Indiana, Louisiana, Montana, Nevada, Texas, Utah, and Washington. State law in the remaining states prohibits nonparticipating providers from being paid directly by insurance companies. In these cases the beneficiary is paid by Delta and the nonparticipating provider bills the family member.

Although research has shown that over 90% of all dental patients travel less than 40 minutes (30 mile one-way) to the dentist, the contract was negotiated for a distance of 35 miles from the beneficiary's residence. Sierra Army Depot, Dugway Proving Ground, White Sands Missile Range, and Yuma Proving Ground, are located on a post where the majority of active duty family members reside in post quarters. Therefore, for those four clinics a listing of Delta participating dentists was requested within a 35 mile radius of the post. Fort Stewart, Fort Bliss, Fort Benning, Fort Huachuca, Fort Bragg, and Fort Sill, are located on major installations where the majority of family members either live on post or within five minutes of post. For those DENTACs a listing of participating Delta dentists was requested within 40 miles of post. Only Fort Irwin and Fort Polk have any sizeable number of family members living further than 5 miles from post. Family members whose sponsor is stationed at Fort Irwin either reside on post or in Barstow, CA, 37 miles from post. There is no practicing civilian dentist within 35 miles of Fort Irwin. A list of Delta participating dentists was requested within 35 miles of Barstow. At Fort Polk, LA the majority of family members either live on post or in two communities: Leesville ten miles north of post or Deridder twenty miles south of post. For Fort Polk three separate lists of Delta participating dentist were requested for each location at a radius of 35 miles.

¹¹Cost share is the amount of money (co-payment) which the family member (or sponsor) is responsible to pay.

The various lists of participating dentists were requested from the Delta Manager of Program Relation and Enrollment Service. Table 4 shows not only where family members reside but also the number of Participating Dentists within 35 miles of their residence. These lists were then sent to DENTAC commanders and clinic officers-in-charge for verification. Discrepancies in the lists were found. Providers were double counted, specialists other than pediatric dentists were counted, providers who had relocated, retired or were no longer accepting Delta patients were counted. Table 5 shows the twelve DENTACs/clinics with the most accurate number of Participating Dentists.

As can be seen there are major discrepancies between the lists of Participating Dentists provided by Delta and the actual number of participating dentists. For example, of the 25 Delta providers within 35 miles of Fort Polk only 6 general or pediatric dentists had signed on with Delta. Furthermore, all providers were unable to provide a routine appointment within 21 calendar days of the DENTAC's call. Also complicating the situation is the fact that very few dentists have established practices within 35 miles of Fort Polk. After reviewing the situation at Fort Polk, Delta acknowledged that there was a problem providing dental services to family members living on Fort Polk.

Table 5 shows that family members living on Fort Irwin and Fort Polk do not have adequate access to dental care as provided by Delta Dental. By checking on availability of routine appointments, DENTACs/clinics other than Fort Polk may discover inadequate access to care.

Recommendations

1. Delta Dental should update and verify their lists of participating dentists at least once a year, preferably every six months.
2. The list of dentists needs to indicate whether the dentist is a general practitioner or a specialist.
3. The list of providers should only include those dentists within the 35 miles radius of the beneficiary's residence.
4. The contract should call for a maximum 40 minute drive of 30 miles from the beneficiary's residence.
5. A toll-free telephone number should be made available to beneficiaries for reporting access problems.

Conclusion

The DHHS criteria for determining dental manpower shortage areas can be applied to the Army Dental Care System. Their underserved criteria has provided a basis to determine which posts could justify treating family members and counting the workload.

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TABLES

TABLE 1

**DENTACs/Clinics Reporting a Population of at Least 3,000 per
Civilian Dentist**

DENTAC	DENTAL CLINICS
Fort Benning	Dugway Proving Ground
Fort Bliss	Fort Chaffee
Fort Bragg	Pine Bluff Arsenal
Fort Irwin	Sierra Army Depot
Fort Leavenworth	Stewart Army Airfield
Fort Polk	White Sands Missile Range
Fort Sill	Yuma Proving Ground
Fort Stewart	
West Point	

TABLE 2

Census Population of at Least 3,000 per Civilian Dentist

DENTAC	DENTAL CLINICS
Fort Benning	Dugway Proving Ground
Fort Bliss	Pine Bluff Arsenal
Fort Bragg	Sierra Army Depot
Fort Irwin	White Sands Missile Range
Fort Pclk	Yuma Proving Ground
Fort Sill	
Fort Stewart	

Table 3

**Population To Dentist Ratio Using 1990 Census and 1987 Dentist
Per County Data**

DENTACS/CLINICS	Phase III Population to Dentist Ratio
Sierra Army Depot ^{abc}	17,092:0
Fort Irwin ^{abc}	9,717:0
Dugway Proving Ground ^{abc}	5,496:0
Fort Polk ^{abc}	6,555:1
Fort Stewart ^{abc}	6,419:1
White Sands Missile Range ^{abc}	5,327:1
Fort Bliss ^{bc}	4,333:1
Yuma Proving Ground ^{bc}	4,145:1
Fort Benning ^{bc}	3,985:1
Fort Huachuca ^c	3,829:1
Fort Bragg ^c	3,286:1
Fort Sill ^c	2,935:1
Pine Bluff Arsenal	2,695:1
West Point	1,560:1

Note: Old Median = 3,239:1
New Median = 1,920:1

- ^a Underserved as defined by DHHS (5,000:1)
- ^b Underserved using 200% of new median (3,840:1)
- ^c Underserved using 150% of new median (2,880:1)

Table 4
Number of Participating Dentist and Residence of Family
Members Reported by the Delta

	Family Members Living on Post	Delta Participating Dentists within 35 miles of Post	Family Members Living on Post and within 5 miles of Post	Delta Participating Dentists within 40 miles of Post	Family Members living more than 5 miles from Post	Delta Participating Dentists within 35 miles of off- post residence	Total Active Duty Family Members
Sierra Army Depot	528	18					520
Fort Irwin	4,236	0			3,061 (Barstow)	96	7,324
Dugway Proving Ground	248	10					248
Fort Polk	9,997	25			2,858 (Leesville) 1,156 (Deridder)	20 30	14,011
Fort Stewart	7,612	42	≈25,620	49			29,310
White Sands Missile Range	1,205	47			202 (Las Cruces)	83	1,407
Fort Bliss	9,621	72	≈25,910	97			27,714
Yuma Proving Ground	600	41					630
Fort Benning	11,353	40	≈24,000	52			26,225
Fort Huachuca	4,744	29	≈10,070	33			10,355
Fort Bagge	11,717	86	≈73,130	107			79,958
Fort Sill	3,981	54	≈20,980	66			21,876

Table 5
DENTAC Verification of Participating Delta Dentist and Residence
of Family Members

	Family Members Living on Post	Delta Participating Dentists within 35 miles of Post	Family Members Living on Post and within 5 miles of Post	Delta Participating Dentists within 40 miles of Post	Family Members living more than 5 miles from Post	Delta Participating Dentists within 35 miles of off- post residence	Total Active Duty Family Members
Army Depot	528	14					528
Fort Irwin	4,236	0			3,061 (Barlow)	44	7,324
Dugway Proving Ground	248	8					248
Fort Polk	9,997	6			2,558 (Leavelle) 1,156 (Deridder)	4 4	14,011
Fort Stewart			≈25,620	33			29,310
White Sands Missile Range	1,205	28					1,407
Fort Bliss			≈25,910	69			27,714
Yuma Proving Ground	600	19					630
Fort Benning			≈24,000	46			26,225
Fort Huachuca			≈10,070	15			10,355
Fort Bragg			≈73,130	89			79,958
Fort Sill			≈20,980	32			21,876

APPENDICES

APPENDIX A

**Final Rule on the Criteria for Health Manpower Shortage
Area Designations (Federal Register, 17 Nov 1980,
Vol. 45, No. 223)**

Federal Register

**Monday
November 17, 1980**

Part IV

Department of Health and Human Services

Public Health Service

**Criteria for Designation of Health
Manpower Shortage Areas; Final Rule**

be a significant consideration in determining relative priorities for NHSC personnel, or for other PHS programs.

Various changes of an editorial or technical nature have also been made to clarify the regulations.

Accordingly, Part 5 of 42 CFR is revised as set forth below.

Dated: September 12, 1980.

Julius B. Richmond,

Assistant Secretary for Health.

Approved: October 31, 1980.

Patricia Roberts Harris,

Secretary.

PART 5—DESIGNATION OF HEALTH MANPOWER SHORTAGE AREAS

Sec.

§ 5.1 Purpose.

§ 5.2 Definitions.

§ 5.3 Procedure for designation of health manpower shortage areas.

§ 5.4 Notification and publication of designations and withdrawals.

Appendix A. Criteria for Designation of Areas having Shortages of Primary Medical Care Manpower.

Appendix B. Criteria for Designation of Areas having Shortages of Dental Manpower.

Appendix C. Criteria for Designation of Areas having Shortages of Psychiatric Manpower.

Appendix D. Criteria for Designation of Areas having Shortages of Vision Care Manpower.

Appendix E. Criteria for Designation of Areas having Shortages of Podiatric Manpower.

Appendix F. Criteria for Designation of Areas having Shortages of Pharmacy Manpower.

Appendix G. Criteria for Designation of Areas having Shortages of Veterinary Manpower.

Authority: Section 215 of the Public Health Service Act, 56 Stat. 690 (42 U.S.C. 216); Section 332 of the Public Health Service Act, 80 Stat. 2770-2772 (42 U.S.C. 254e).

§ 5.1 Purpose.

These regulations establish criteria and procedures for the designation of geographic areas, population groups, medical facilities, and other public facilities, in the States, as health manpower shortage areas.

§ 5.2 Definitions.

"Act" means the Public Health Service Act, as amended.

"Health manpower shortage area" means any of the following which the Secretary determines has a shortage of health manpower: (1) An urban or rural area (which need not conform to the geographic boundaries of a political subdivision and which is a rational area for the delivery of health services); (2) a population group; or (3) a public or nonprofit private medical facility.

"Health service area" means a health service area whose boundaries have

been designated by the Secretary, under section 1511 of the Act, for purposes of health planning activities.

"Health systems agency" or "HSA" means the health systems agency designated, under section 1515 of the Act, to carry out health planning activities for a specific health service area.

"Medical facility" means a facility for the delivery of health services and includes: (1) A community health center, public health center, outpatient medical facility, or community mental health center; (2) a hospital, State mental hospital, facility for long-term care, or rehabilitation facility; (3) a migrant health center or an Indian Health service facility; (4) a facility for delivery of health services to inmates in a U.S. penal or correctional institution (under section 323 of the Act) or a State correctional institution; (5) a Public Health Service medical facility (used in connection with the delivery of health services under section 320, 321, 322, 324, 325, or 326 of the Act); or (6) any other Federal medical facility.

"Metropolitan area" means an area which has been designated by the Office of Management and Budget as a standard metropolitan statistical area (SMSA). All other areas are "non-metropolitan areas."

"Poverty level" means the poverty level as defined by the Bureau of the Census, using the poverty index adopted by a Federal Interagency Committee in 1969, and updated each year to reflect changes in the Consumer Price Index.

"Secretary" means the Secretary of Health and Human Services and any other officer or employee of the Department to whom the authority involved has been delegated.

"State" includes, in addition to the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, Guam, American Samoa, and the Trust Territory of the Pacific Islands.

"State health planning and development agency" or "SHPDA" means a State health planning and development agency designated under section 1521 of the Act.

§ 5.3 Procedure for designation of health manpower shortage areas.

(a) Using data available to the Department from national, State, and local sources and based upon the criteria in the Appendices to this part, the Department will annually prepare listings (by State and health service area) of currently designated health manpower shortage areas and potentially designatable areas, together with appropriate related data available

to the Department. Relevant portions of this material will then be forwarded to each health systems agency, State health planning and development agency, and Governor, who will be asked to review the listings for their State, correct any errors of which they are aware, and offer their recommendations, if any, within 90 days, as to which geographic areas, population groups, and facilities in areas under their jurisdiction should be designated. An information copy of these listings will also be made available, upon request, to interested parties for their use in providing comments or recommendations to the Secretary and/or to the appropriate HSA, SHPDA, or Governor.

(b) In addition, any agency or individual may request the Secretary to designate (or withdraw the designation of) a particular geographic area, population group, or facility as a health manpower shortage area. Each request will be forwarded by the Secretary to the appropriate HSA, SHPDA, and Governor, who will be asked to review it and offer their recommendations, if any, within 30 days. An information copy will also be made available to other interested parties, upon request, for their use in providing comments or recommendations to the Secretary and/or to the appropriate HSA, SHPDA, or Governor.

(c) In each case where the designation of a public facility (including a Federal medical facility) is under consideration, the Secretary will give written notice of the proposed designation to the chief administrative officer of the facility, who will be asked to review it and offer their recommendations, if any, within 30 days.

(d) After review of the available information and consideration of the comments and recommendations submitted, the Secretary will designate health manpower shortage areas and withdraw the designation of any areas which have been determined no longer to have a shortage of health manpower.

§ 5.4 Notification and publication of designations and withdrawals.

(a) The Secretary will give written notice of the designation (or withdrawal of designation) of a health manpower shortage area, not later than 60 days from the date of the designation (or withdrawal of designation), to:

(1) The Governor of each State in which the area, population group, medical facility, or other public facility so designated is in whole or in part located;

(2) Each HSA for a health service area which includes all or any part of the

area, population group, medical facility, or other public facility so designated;

(3) The SHPDA for each State in which the area, population group, medical facility, or other public facility so designated is in whole or in part located; and

(4) Appropriate public or nonprofit private entities which are located in or which have a demonstrated interest in the area so designated.

(b) The Secretary will periodically publish updated lists of designated health manpower shortage areas in the Federal Register, by type of manpower shortage. An updated list of areas for each type of manpower shortage will be published at least once annually.

(c) The effective date of the designation of an area shall be the date of the notification letter to the individual or agency which requested the designation, or the date of publication in the Federal Register, whichever comes first.

(d) Once an area is listed in the Federal Register as a designated health manpower shortage area, the effective date of any later withdrawal of the area's designation shall be the date when notification of the withdrawal, or an updated list of designated areas which does not include it, is published in the Federal Register.

Appendix A—Criteria for Designation of Areas Having Shortages of Primary Medical Care Manpower

Part I—Geographic Areas

A. Criteria.

A geographic area will be designated as having a shortage of primary medical care manpower if the following three criteria are met:

1. The area is a rational area for the delivery of primary medical care services.

2. One of the following conditions prevails within the area:

(a) The area has a population to full-time-equivalent primary care physician ratio of at least 3,500:1.

(b) The area has a population to full-time-equivalent primary care physician ratio of less than 3,500:1 but greater than 3,000:1 and has unusually high needs for primary care services or insufficient capacity of existing primary care providers.

3. Primary medical care manpower in contiguous areas are overutilized, excessively distant, or inaccessible to the population of the area under consideration.

B. Methodology.

In determining whether an area meets the criteria established by paragraph A of this part, the following methodology will be used:

1. Rational Areas for the Delivery of Primary Medical Care Services.

(a) The following areas will be considered rational areas for the delivery of primary medical care services:

(i) A county, or a group of contiguous counties whose population centers are within 30 minutes travel time of each other.

(ii) A portion of a county, or an area made up of portions of more than one county, whose population, because of topography, market or transportation patterns, distinctive population characteristics or other factors, has limited access to contiguous area resources, as measured generally by a travel time greater than 30 minutes to such resources.

(iii) Established neighborhoods and communities within metropolitan areas which display a strong self-identity (as indicated by a homogeneous socioeconomic or demographic structure and/or a tradition of interaction or interdependency), have limited interaction with contiguous areas, and which, in general, have a minimum population of 20,000.

(b) The following distances will be used as guidelines in determining

distances corresponding to 30 minutes travel time:

(i) Under normal conditions with primary roads available: 20 miles.

(ii) In mountainous terrain or in areas with only secondary roads available: 15 miles.

(iii) In flat terrain or in areas connected by interstate highways: 25 miles.

Within inner portions of metropolitan areas, information on the public transportation system will be used to determine the distance corresponding to 30 minutes travel time.

2. Population Count.

The population count used will be the total permanent resident civilian population of the area, excluding inmates of institutions, with the following adjustments, where appropriate:

(a) Adjustments to the population for the differing health service requirements of various age-sex population groups will be computed using the table below of visit rates for 12 age-sex population cohorts. The total expected visit rate will first be obtained by multiplying each of the 12 visit rates in the table by the size of the area population within that particular age-sex cohort and adding the resultant 12 visit figures together. This total expected visit rate will then be divided by the U.S. average per capita visit rate of 5.1, to obtain the adjusted population for the area.

Sex	Age groups					
	Under 5	5-14	15-24	25-44	45-64	65 and over
Male	7.9	3.6	2.3	2.6	4.7	6.4
Female	6.4	3.2	2.5	2.4	3.5	6.9

(b) The effect of transient populations on the need of an area for primary care manpower will be taken into account as follows:

(i) Seasonal residents, i.e., those who maintain a residence in the area but inhabit it for only 2 to 8 months per year, may be included but must be weighted in proportion to the fraction of the year they are present in the area.

(ii) Other tourists (non-resident) may be included in an area's population but only with a weight of 0.25, using the following formula: Effective tourist contribution to population = $0.25 \times (\text{fraction of year tourists are present in area}) \times (\text{average daily number of tourists during portion of year that tourists are present})$.

(iii) Migratory workers and their families may be included in an area's

population, using the following formula: Effective migrant contribution to population = $(\text{fraction of year migrants are present in area}) \times (\text{average daily number of migrants during portion of year that migrants are present})$.

3. Counting of Primary Care Practitioners.

(a) All non-Federal doctors of medicine (M.D.) and doctors of osteopathy (D.O.) providing direct patient care who practice principally in one of the four primary care specialties—general or family practice, general internal medicine, pediatrics, and obstetrics and gynecology—will be counted. Those physicians engaged solely in administration, research, and teaching will be excluded. Adjustments for the following factors will be made in

computing the number of full-time-equivalent (FTE) primary care physicians:

(i) Interns and residents will be counted as 0.1 full-time equivalent (FTE) physicians.

(ii) Graduates of foreign medical schools who are not citizens or lawful permanent residents of the United States will be excluded from physician counts.

(iii) Those graduates of foreign medical schools who are citizens or lawful permanent residents of the United States, but do not have unrestricted licenses to practice medicine, will be counted as 0.5 FTE physicians.

(b) Practitioners who are semi-retired, who operate a reduced practice due to infirmity or other limiting conditions, or who provide patient care services to the residents of the area only on a part-time basis will be discounted through the use of full-time equivalency figures. A 40-hour work week will be used as the standard for determining full-time equivalents in these cases. For practitioners working less than a 40-hour week, every four (4) hours (or $\frac{1}{2}$ day) spent providing patient care, in either ambulatory or inpatient settings, will be counted as 0.1 FTE (with numbers obtained for FTE's rounded to the nearest 0.1 FTE), and each physician providing patient care 40 or more hours a week will be counted as 1.0 FTE physician. (For cases where data are available only for the number of hours providing patient care in office settings, equivalencies will be provided in guidelines.)

(c) In some cases, physicians located within an area may not be accessible to the population of the area under consideration. Allowances for physicians with restricted practices can be made, on a case-by-case basis. However, where only a portion of the population of the area cannot access existing primary care resources in the area, a population group designation may be more appropriate (see Part II of this Appendix).

(d) Hospital staff physicians involved exclusively in inpatient care will be excluded. The number of full-time equivalent physicians practicing in organized outpatient departments and primary care clinics will be included, but those in emergency rooms will be excluded.

(e) Physicians who are suspended under provisions of the Medicare-Medicaid Anti-Fraud and Abuse Act for a period of eighteen months or more will be excluded.

4. Determination of Unusually High Needs for Primary Medical Care Services.

An area will be considered as having unusually high needs for primary health care services if at least one of the following criteria is met:

- (a) The area has more than 100 births per year per 1,000 women, aged 15-44.
- (b) The area has more than 20 infant deaths per 1,000 live births.
- (c) More than 20% of the population (or of all households) have incomes below the poverty level.

5. Determination of Insufficient Capacity of Existing Primary Care Providers.

An area's existing primary care providers will be considered to have insufficient capacity if at least two of the following criteria are met:

- (a) More than 8,000 office or outpatient visits per year per FTE primary care physician serving the area.
- (b) Unusually long waits for appointments for routine medical services (i.e., more than 7 days for established patients and 14 days for new patients).
- (c) Excessive average waiting time at primary care providers (longer than one hour where patients have appointments or two hours where patients are treated on a first-come, first-served basis).
- (d) Evidence of excessive use of emergency room facilities for routine primary care.
- (e) A substantial proportion (2/3 or more) of the area's physicians do not accept new patients.
- (f) Abnormally low utilization of health services, as indicated by an average of 2.0 or less office visits per year on the part of the area's population.

6. Contiguous Area Considerations.

Primary care manpower in areas contiguous to an area being considered for designation will be considered excessively distant, overutilized or inaccessible to the population of the area under consideration if one of the following conditions prevails in each contiguous area:

- (a) Primary care manpower in the contiguous area are more than 30 minutes travel time from the population center(s) of the area being considered for designation (measured in accordance with paragraph B.1(b) of this Part).
- (b) The contiguous area population-to-full-time-equivalent primary care physician ratio is in excess of 2000:1, indicating that practitioners in the contiguous area cannot be expected to help alleviate the shortage situation in the area being considered for designation.
- (c) Primary care manpower in the contiguous area are inaccessible to the

population of the area under consideration because of specified access barriers, such as:

- (i) Significant differences between the demographic (or socio-economic) characteristics of the area under consideration and those of the contiguous area, indicating that the population of the area under consideration may be effectively isolated from nearby resources. This isolation could be indicated, for example, by an unusually high proportion of non-English-speaking persons.
- (ii) A lack of economic access to contiguous area resources, as indicated particularly where a very high proportion of the population of the area under consideration is poor (i.e., where more than 20 percent of the population or the households have incomes below the poverty level), and Medicaid-covered or public primary care services are not available in the contiguous area.

C. Determination of Degree of Shortage.

Designated areas will be assigned to degree-of-shortage groups, based on the ratio (R) of population to number of full-time equivalent primary care physicians and the presence or absence of unusually high needs for primary health care services, according to the following table:

	High needs not indicated	High needs indicated
Group 1 — No physicians	No physicians, or R < 5,000	No physicians, or R < 5,000
Group 2 — R < 5,000	5,000 > R > 4,000	5,000 > R > 4,000
Group 3 — 5,000 > R > 4,000	4,000 > R > 3,500	4,000 > R > 3,500
Group 4 — 4,000 > R > 3,500	3,500 > R > 3,000	3,500 > R > 3,000

Part II—Population Groups

A. Criteria.

1. In general, specific population groups within particular geographic areas will be designated as having a shortage of primary medical care manpower if the following three criteria are met:

- (a) The area in which they reside is rational for the delivery of primary medical care services, as defined in paragraph B.1 of Part I of this Appendix.
- (b) Access barriers prevent the population group from use of the area's primary medical care providers. Such barriers may be economic, linguistic, cultural, or architectural, or could involve refusal of some providers to accept certain types of patients or to accept Medicaid reimbursement.
- (c) The ratio of the number of persons in the population group to the number of primary care physicians practicing in

the area and serving the population group is at least 3,000:1.

2. Indians and Alaska Natives will be considered for designation as having shortages of primary care manpower as follows:

(a) Groups of members of Indian tribes (as defined in section 4(d) of Pub. L. 94-437, the Indian Health Care Improvement Act of 1976) are automatically designated.

(b) Other groups of Indians or Alaska Natives (as defined in section 4(c) of Pub. L. 94-437) will be designated if the general criteria in paragraph A are met.

B. Determination of Degree of Shortage.

Each designated population group will be assigned to a degree-of-shortage group, based on the ratio (R) of the group's population to the number of primary care physicians serving it, as follows:

- Group 1—No physicians or $R \geq 5,000$.
- Group 2— $5,000 > R \geq 4,000$.
- Group 3— $4,000 > R \geq 3,500$.
- Group 4— $3,500 > R \geq 3,000$.

Population groups which have received "automatic" designation will be assigned to degree-of-shortage group 4 if no information on the ratio of the number of persons in the group to the number of FTE primary care physicians serving them is provided.

PART III—Facilities

A. Federal and State Correctional Institutions.

1. Criteria.

Medium to maximum security Federal and State correctional institutions and youth detention facilities will be designated as having a shortage of primary medical care manpower if both the following criteria are met:

- (a) The institution has at least 250 inmates.
- (b) The ratio of the number of inmates per year to the number of FTE primary care physicians serving the institution is at least 1,000:1. (Here the number of inmates is the number of inmates present at the beginning of the year plus the number of new inmates entering the institution during the year, including those who left before the end of the year; the number of FTE primary care physicians is computed as in Part I, Section B, paragraph 3 above.)

2. Determination of Degree of Shortage.

Designated correctional institutions will be assigned to degree-of-shortage groups based on the number of inmates and/or the ratio (R) of inmates to primary care physicians, as follows:

- Group 1—Institutions with 300 or more inmates and no physicians.

Group 2—Other institutions with no physicians and institutions with $R \geq 2,000$.

Group 3—Institutions with $2,000 > R \geq 1,000$.

B. Public or Non-Profit Medical Facilities.

1. Criteria.

Public or non-profit private medical facilities will be designated as having a shortage of primary medical care manpower if:

- (a) the facility is providing primary medical care services to an area or population group designated as having a primary care manpower shortage; and
- (b) the facility has insufficient capacity to meet the primary care needs of that area or population group.

2. Methodology

In determining whether public or nonprofit private medical facilities meet the criteria established by paragraph B.1 of this Part, the following methodology will be used:

(a) Provision of Services to a Designated Area or Population Group.

A facility will be considered to be providing services to a designated area or population group if either:

- (i) A majority of the facility's primary care services are being provided to residents of designated primary care manpower shortage areas or to population groups designated as having a shortage of primary care manpower; or
- (ii) The population within a designated primary care shortage area or population group has reasonable access to primary care services provided at the facility. Reasonable access will be assumed if the area within which the population resides lies within 30 minutes travel time of the facility and non-physical barriers (relating to demographic and socioeconomic characteristics of the population) do not prevent the population from receiving care at the facility.

Migrant health centers (as defined in section 319(a)(1) of the Act) which are located in areas with designated migrant population groups and Indian Health Service facilities are assumed to be meeting this requirement.

(b) Insufficient capacity to meet primary care needs.

A facility will be considered to have insufficient capacity to meet the primary care needs of the area or population it serves if at least two of the following conditions exist at the facility:

- (i) There are more than 8,000 outpatient visits per year per FTE primary care physician on the staff of the facility. (Here the number of FTE primary care physicians is computed as in Part I, Section B, paragraph 3 above.)

(ii) There is excessive usage of emergency room facilities for routine primary care.

(iii) Waiting time for appointments is more than 7 days for established patients or more than 14 days for new patients, for routine health services.

(iv) Waiting time at the facility is longer than 1 hour where patients have appointments or 2 hours where patients are treated on a first-come, first-served basis.

3. Determination of Degree of Shortage.

Each designated medical facility will be assigned to the same degree-of-shortage group as the designated area or population group which it serves.

Appendix B—Criteria for Designation of Areas Having Shortages of Dental Manpower

Part I—Geographic Areas

A. Criteria.

A geographic area will be designated as having a dental manpower shortage if the following three criteria are met:

- 1. The area is a rational area for the delivery of dental services.
- 2. One of the following conditions prevails in the area:
 - (a) The area has a population to full-time-equivalent dentist ratio of at least 5,000:1, or
 - (b) The area has a population to full-time-equivalent dentist ratio of less than 5,000:1 but greater than 4,000:1 and has unusually high needs for dental services or insufficient capacity of existing dental providers.
- 3. Dental manpower in contiguous areas are overutilized, excessively distant, or inaccessible to the population of the area under consideration.

B. Methodology.

In determining whether an area meets the criteria established by paragraph A of this Part, the following methodology will be used:

1. Rational Area for the Delivery of Dental Services.

(a) The following areas will be considered rational areas for the delivery of dental health services:

- (i) A county, or a group of several contiguous counties whose population centers are within 40 minutes travel time of each other.
- (ii) A portion of a county (or an area made up of portions of more than one county) whose population, because of topography, market or transportation patterns, distinctive population characteristics, or other factors, has limited access to contiguous area resources, as measured generally by a travel time of greater than 40 minutes to such resources.

(iii) Established neighborhoods and communities within metropolitan areas which display a strong self-identity (as indicated by a homogeneous socioeconomic or demographic structure and/or a traditional of interaction or intradependency), have limited interaction with contiguous areas, and which, in general, have a minimum population of 20,000.

(b) The following distances will be used as guidelines in determining distances corresponding to 40 minutes travel time:

(i) Under normal conditions with primary roads available: 25 miles.

(ii) In mountainous terrain or in areas with only secondary roads available: 20 miles.

(iii) In flat terrain or in areas connected by interstate highways: 30 miles.

Within inner portions of metropolitan areas, information on the public transportation system will be used to determine the distance corresponding to 40 minutes travel time.

2. Population Count.

The population count use will be the total permanent resident civilian population of the area, excluding inmates of institutions, with the following adjustments:

(a) Seasonal residents, i.e., those who maintain a residence in the area but inhabit it for only 2 to 8 months per year, may be included but must be weighted in proportion to the fraction of the year they are present in the area.

(b) Migratory workers and their families may be included in an area's population using the following formula: Effective migrant contribution to population = (fraction of year migrants are present in area) × (average daily number of migrants during portion of year that migrants are present).

3. Counting of Dental Practitioners.

(a) All non-Federal dentists providing patient care will be counted, except in those areas where it is shown that specialists (those dentists not in general practice or pedodontics) are serving a larger area and are not addressing the general dental care needs of the area under consideration.

(b) Full-time equivalent (FTE) figures will be used to reflect productivity differences among dental practices based on the age of the dentists, the number of auxiliaries employed, and the number of hours worked per week. In general, the number of FTE dentists will be computed using weights obtained from the matrix in Table 1, which is based on the productivity of dentists at various ages, with different numbers of auxiliaries, as compared with the average productivity of all dentists. For

the purposes of these determinations, an auxiliary is defined as any non-dentist staff employed by the dentist to assist in operation of the practice.

Table 1. Equivalency Weights, by Age and Number of Auxiliaries

	<25	25-39	40-44	45+
No auxiliary	0.5	0.7	0.8	0.9
One auxiliary	1.0	0.8	0.9	0.7
Two auxiliaries	1.2	1.0	1.0	0.8
Three auxiliaries	1.4	1.2	1.0	1.0
Four or more auxiliaries	1.5	1.5	1.0	1.2

If information on the number of auxiliaries employed by the dentist is not available, Table 2 will be used to compute the number of full-time equivalent dentists.

Table 2. Equivalency Weights, by Age

	25	25-39	40-44	45+
Equivalency weights	1.2	0.9	0.6	0.8

The number of FTE dentists within a particular age group (or age/auxiliary group) will be obtained by multiplying the number of dentists within that group by its corresponding equivalency weight. The total supply of FTE dentists within an area is then computed as the sum of those dentists within each age (or age/auxiliary) group.

(c) The equivalency weights specified in tables 1 and 2 assume that dentists within a particular group are working full-time (40 hours per week). Where appropriate data are available, adjusted equivalency figures for dentists who are semi-retired, who operate a reduced practice due to infirmity or other limiting conditions, or who are available to the population of an area only on a part-time basis will be used to reflect the reduced availability of these dentists. In computing these equivalency figures, every 4 hours (or 1/2 day) spent in the dental practice will be counted as 0.1 FTE except that each dentist working more than 40 hours a week will be counted as 1.0. The count obtained for a particular age group of dentists will then be multiplied by the appropriate equivalency weight from table 1 or 2 to obtain a full-time equivalent figure for dentists within that particular age or age/auxiliary category.

4. Determination of Unusually High Needs for Dental Services.

An area will be considered as having unusually high needs for dental services if at least one of the following criteria is met:

(a) More than 20% of the population (or of all households) has incomes below the poverty level.

(b) The majority of the area's population does not have a fluoridated water supply.

5. Determination of Insufficient Capacity of Existing Dental Care Providers.

An area's existing dental care providers will be considered to have insufficient capacity if at least two of the following criteria are met:

(a) More than 5,000 visits per year per FTE dentist serving the area.

(b) Unusually long waits for appointments for routine dental services (i.e., more than 8 weeks).

(c) A substantial proportion (1/3 or more) of the area's dentists do not accept new patients.

6. Contiguous Area Considerations.

Dental manpower in areas contiguous to an area being considered for designation will be considered excessively distant, overutilized or inaccessible to the population of the area under consideration if one of the following conditions prevails in each contiguous area:

(a) Dental manpower in the contiguous area are more than 40 minutes travel time from the center of the area being considered for designation (measured in accordance with Paragraph B.1.(b) of this Part).

(b) Contiguous area population-to-(FTE) dentist ratios are in excess of 3,000:1, indicating that resources in contiguous areas cannot be expected to help alleviate the shortage situation in the area being considered for designation.

(c) Dental manpower in the contiguous area are inaccessible to the population of the area under consideration because of specified access barriers, such as:

(i) Significant differences between the demographic (or socioeconomic) characteristics of the area under consideration and those of the contiguous area, indicating that the population of the area under consideration may be effectively isolated from nearby resources. Such isolation could be indicated, for example, by an unusually high proportion of non-English-speaking persons.

(ii) A lack of economic access to contiguous area resources, particularly where a very high proportion of the population of the area under consideration is poor (i.e., where more than 20 percent of the population or of the households have incomes below the poverty level) and Medicaid-covered or public dental services are not available in the contiguous area.

C. Determination of Degree of Shortage.

The degree of shortage of a given geographic area, designated as having a shortage of dental manpower, will be determined using the following procedure:

Designated areas will be assigned to degree-of-shortage groups, based on the ratio (R) of population to number of full-time-equivalent dentists and the presence or absence of unusually high needs for dental services, or insufficient capacity of existing dental care providers according to the following table:

	High needs or insufficient capacity not indicated	High needs or insufficient capacity indicated
Group 1—No dentists	No dentists or R2 1,500.	
Group 2—R2 1,000	1,000 > R2 1,500.	
Group 3—1,000 > R2 1,500	1,000 > R2 1,500.	
Group 4—1,000 > R2 1,500	1,000 > R2 1,500.	

Part II—Population Groups

A. Criteria.

1. In general, specified population groups within particular geographic areas will be designated as having a shortage of dental care manpower if the following three criteria are met:

a. The area in which they reside is rational for the delivery of dental care services, as defined in paragraph B.1 of Part I of this appendix.

b. Access barriers prevent the population group from use of the area's dental providers.

c. The ratio (R) of the number of persons in the population group to the number of dentists practicing in the area and serving the population group is at least 4,000:1.

2. Indians and Alaska Natives will be considered for designation as having shortages of dental manpower as follows:

(a) Groups of members of Indian tribes (as defined in section 4(d) of Pub. L. 94-437, the Indian Health Care Improvement Act of 1976) are automatically designated.

(b) Other groups of Indians or Alaska Natives (as defined in section 4(c) of Pub. L. 94-437) will be designated if the general criteria in paragraph 1 are met.

B. Determination of Degree of Shortage.

Each designated population group will be assigned to a degree-of-shortage group as follows:

Group 1—No dentists or R2 1,500.
Group 2—1,000 > R2 1,500.
Group 3—1,000 > R2 1,500.
Group 4—1,000 > R2 1,500.

Population groups which have received "automatic" designation will be

assigned to degree-of-shortage group 4 unless information on the ratio of the number of persons in the group to the number of FTE dentists serving them is provided.

Part III—Facilities

A. Federal and State Correctional Institutions.

1. Criteria.

Medium to maximum security Federal and State correctional institutions and youth detention facilities will be designated as having a shortage of dental manpower if both the following criteria are met:

(a) The institution has at least 250 inmates.

(b) The ratio of the number of inmates per year to the number of FTE dentists serving the institution is at least 1,500:1. (Here the number of inmates is the number of inmates present at the beginning of the year plus the number of new inmates entering the institution during the year, including those who left before the end of the year; the number of FTE dentists is computed as in Part I, Section B, paragraph 3 above.)

2. Determination of Degree-of-Shortage.

Designated correctional institutions will be assigned to degree-of-shortage groups as follows, based on number of inmates and/or the ratio (R) of inmates to dentists:

Group 1—Institutions with 500 or more inmates and no dentists.
Group 2—Other institutions with no dentists and institutions with R > 3,000.
Group 3—Institutions with 1,000 > R > 1,500.

B. Public or Non-Profit Private Dental Facilities.

1. Criteria.

Public or nonprofit private facilities providing general dental care services will be designated as having a shortage of dental manpower if both of the following criteria are met:

(a) The facility is providing general dental care services to an area or population group designated as having a dental manpower shortage; and

(b) The facility has insufficient capacity to meet the dental care needs of that area or population group.

2. Methodology.

In determining whether public or nonprofit private facilities meet the criteria established by paragraph B.1. of this part, the following methodology will be used:

(a) Provision of Services to a Designated Area or Population Group.

A facility will be considered to be providing services to an area or population group if either:

(i) A majority of the facility's dental

care services are being provided to residents of designated dental manpower shortage areas or to population groups designated as having a shortage of dental manpower; or

(ii) The population within a designated dental shortage area or population group has reasonable access to dental services provided at the facility. Reasonable access will be assumed if the population lies within 40 minutes travel time of the facility and non-physical barriers (relating to demographic and socioeconomic characteristics of the population) do not prevent the population from receiving care at the facility.

Migrant health centers (as defined in section 319(a)(1) of the Act) which are located in areas with designated migrant population groups and Indian Health Service facilities are assumed to be meeting this requirement.

(b) Insufficient Capacity to Meet Dental Care Needs.

A facility will be considered to have insufficient capacity to meet the dental care needs of a designated area or population group if either of the following conditions exists at the facility.

(i) There are more than 5,000 outpatient visits per year per FTE dentist on the staff of the facility. (Here the number of FTE dentists is computed as in Part I, Section B, paragraph 3 above.)

(ii) Waiting time for appointments is more than 6 weeks for routine dental services.

3. Determination of Degree of Shortage.

Each designated dental facility will be assigned to the same degree-of-shortage group as the designated area or population group which it serves.

Appendix C—Criteria for Designation of Areas having Shortages of Psychiatric Manpower

Part I—Geographic Areas

A. Criteria.

A geographic area will be designated as having a shortage of psychiatric manpower if the following three criteria are met:

1. The area is a rational area for the delivery of psychiatric services.

2. One of the following conditions prevails within the area:

(a) The area has a population to full-time-equivalent psychiatrist ratio of at least 30,000:1; or

(b) The area has a population to full-time-equivalent psychiatrist ratio of less than 30,000:1 but greater than 20,000:1

and has unusually high needs for psychiatric services.

3. Psychiatric manpower in contiguous areas are overutilized, excessively distant or inaccessible to residents of the area under consideration.

3. Methodology.

In determining whether an area meets the criteria established by paragraph A of this Part, the following methodology will be used:

1. Rational Areas for the Delivery of Psychiatric Services.

(a) The following areas will be considered rational areas for the delivery of psychiatric services:

(i) An established mental health catchment area, as designated in the State Mental Health Plan under the general criteria set forth in section 238 of the Community Mental Health Centers Act.

(ii) A portion of an established mental health catchment area whose population, because of topography, market and/or transportation patterns or other factors, has limited access to psychiatric resources in the rest of the catchment area, as measured generally by a travel time of greater than 40 minutes to these resources.

(iii) A county or metropolitan area which contains more than one mental health catchment area, where data are unavailable by individual catchment area.

(b) The following distances will be used as guidelines in determining distances corresponding to 40 minutes travel time:

(i) Under normal conditions with primary roads available: 25 miles.

(ii) In mountainous terrain or in areas with only secondary roads available: 20 miles.

(iii) In flat terrain or in areas connected by interstate highways: 30 miles.

Within inner portions of metropolitan areas, information on the public transportation system will be used to determine the distance corresponding to 40 minutes travel time.

2. Population Count.

The population count used will be the total permanent resident civilian population of the area, excluding inmates of institutions.

3. Counting of Psychiatrists.

(a) All non-Federal psychiatrists providing patient care (direct or other, including consultation and supervision) in ambulatory or other short-term care settings to residents of the area more than one-half day per week will be counted. Those psychiatrists engaged solely in administration, research, and teaching will be excluded. Adjustments for the following factors will be made in

computing the number of full-time-equivalent (FTE) psychiatrists:

(i) Psychiatric residents will be counted as 0.5 FTE psychiatrists.

(ii) Graduates of foreign medical schools who are not citizens or lawful permanent residents of the United States will be excluded from psychiatrist counts.

(iii) Those graduates of foreign medical schools who are citizens or lawful permanent residents of the United States, but do not have unrestricted licenses to practice medicine, will be counted as 0.5 FTE psychiatrists.

(b) Psychiatrists who are semi-retired, who operate a reduced practice due to infirmity or other limiting conditions, or who provide patient care to the population of an area only on a part-time basis will be discounted through the use of "full-time equivalency" figures. A 40-hour work week will be used as the standard for determining full-time equivalents in these cases. For practitioners working less than a 40-hour week, every 4 hours (or 1/4 day) spent providing patient care services in ambulatory or inpatient settings will be counted as 0.1 FTE, and each psychiatrist providing patient care 40 or more hours a week will be counted as 1.0 FTE. For cases where data are available only for hours providing care in office settings, equivalencies will be provided in guidelines.

(c) In some cases, psychiatrists located within an area may not be accessible to the general population of the area under consideration. Allowances for psychiatrists working in restricted facilities will be made on a case-by-case basis. Examples of restricted practices include staff positions in correctional institutions, youth detention facilities, residential treatment centers for emotionally disturbed or mentally retarded children, and inpatient units of State or county mental hospitals.

(d) In cases where there are mental health facilities or institutions providing both inpatient and outpatient services, those psychiatrists assigned to outpatient or other short-term care units will be counted. If the psychiatric staff is not specifically allocated to one service or the other, the number of psychiatrists in short-term care will be estimated on the basis of the relative workload in each type of setting.

(e) Psychiatrists who are suspended for a period of eighteen months or more under provisions of the Medicare-Medicaid Anti-Fraud and Abuse Act will not be counted.

4. Determination of Unusually High Need for Psychiatric Services.

An area will be considered to have unusually high needs for psychiatric services if two or more of the following criteria are met:

(a) 20 percent of the population (or of all households) have incomes below the poverty level, or the area has been designated as a poverty area in accordance with section 242 of the Community Mental Health Centers Act.

(b) A young dependency ratio (ratio of children under 18 to population 18-64) in excess of 60 percent.

(c) An aged dependency ratio (ratio of persons aged 65 and over to population 18-64) in excess of 25 percent.

(d) A high prevalence of alcoholism in the population, as indicated by a value of 0.211 for the catchment area's index of relative alcoholism prevalence (as developed by the National Institute of Alcohol Abuse and Alcoholism for the purposes of allocating funds over 42 U.S.C. 4571).

5. Contiguous Area Considerations.

Psychiatric manpower in areas contiguous to an area being considered for designation will be considered excessively distant, overutilized or inaccessible to the population of the area under consideration if one of the following conditions prevails in each contiguous area:

(a) Psychiatrists in the contiguous area are more than 40 minutes travel time from the center of the area being considered for designation (measured in accordance with paragraph B.1(b) of this part).

(b) Contiguous area population-to-FTE psychiatrist ratios are in excess of 20,000:1, indicating that psychiatrists in contiguous areas cannot be expected to help alleviate the shortage situation in the area for which designation is being considered.

(c) Psychiatric manpower in contiguous areas are inaccessible to the population of the requested area because of geographic, cultural, language or other barriers or because of residency restrictions of programs or facilities providing such manpower.

C. Determination of Degree of Shortage

Designated areas will be assigned to degree-of-shortage groups, based on the ratio (R) of population to number of FTE psychiatrists and the presence or absence of unusually high needs for psychiatric services, according to the following table:

	High needs not indicated	High needs indicated
Group 1	No psychiatrist	No psychiatrist
Group 2	R > 50,000	R > 40,000
Group 3	50,000 > R > 40,000	40,000 > R > 30,000
Group 4	40,000 > R > 30,000	30,000 > R > 20,000

Part II—Population Groups

Population groups within particular catchment areas will be designated as having a psychiatric manpower shortage if the following conditions prevail:

(a) Access barriers prevent the population group from using those psychiatric manpower which are present in the area, and

(b) The ratio of the number of persons in the population group to the number of FTE psychiatrists serving the population group, and practicing within 40 minutes travel time of the center of the area where the population group resides, is at least 30,000:1 (20,000:1 where unusually high needs for psychiatric services are indicated).

B. Determination of Degree of Shortage.

Designated population groups will be assigned to degree-of-shortage groups as in Section C of Part I of this Appendix, based on the ratio of the group's population to the number of psychiatrists serving it, together with the presence or absence of unusually high needs for psychiatric services among the population group.

Part III—Facilities**A. Federal and State Correctional Institutions****1. Criteria.**

Medium to maximum security Federal and State correctional institutions for adults or youth, and youth detention facilities, will be designated as having a shortage of psychiatric manpower if both of the following criteria are met:

(a) The institution has more than 250 inmates, and

(b) The ratio of the number of inmates per year to the number of FTE psychiatrists serving the institution is at least 2,000:1. (Here the number of inmates is the number of inmates or residents present at the beginning of the year, plus the number of new inmates or residents entering the institution during the year, including those who left before the end of the year; the number of FTE psychiatrists is computed as in Part I, Section B, paragraph 3 above.)

2. Determination of Degree of Shortage.

Correctional facilities and youth detention facilities will be assigned to degree-of-shortage groups, based on the number of inmates and/or the ratio (R) of inmates to FTE psychiatrists, as follows:

Group 1—Facilities with 500 or more inmates or residents and no psychiatrist.

Group 2—Other facilities with no psychiatrists and facilities with 500 or more

inmates or residents and $R > 3,000$.

Group 3—All other facilities.

B. State and County Mental Hospitals.**1. Criteria.**

A State or county hospital will be designated as having a shortage of psychiatric manpower if both of the following criteria are met:

(a) The mental hospital has an average daily inpatient census of at least 100; and

(b) The number of workload units per FTE psychiatrists available at the hospital exceeds 300, where workload units are calculated using the following formula:

Total workload units = average daily inpatient census + $2 \times$ (number of inpatient admissions per year) + $0.5 \times$ (number of admissions to day care and outpatient services per year).

2. Determination of Degree of Shortage.

State or county mental hospitals will be assigned to degree-of-shortage groups, based on the ratio (R) of workload units to number of FTE psychiatrists, as follows:

Group 1—No psychiatrists, or $R > 1,800$.

Group 2— $1,800 > R > 1,200$.

Group 3— $1,200 > R > 800$.

Group 4— $800 > R > 300$.

C. Community Mental Health Centers and Other Public or Nonprofit Private Facilities.**1. Criteria.**

A community mental health center (CMHC), authorized by Pub. L. 94-63, or other public or nonprofit private facility providing psychiatric services to an area or population group, may be designated as having a shortage of psychiatric manpower if the facility is providing (or is responsible for providing) psychiatric services to an area or population group designated as having a psychiatric manpower shortage, and the facility has insufficient capacity to meet the psychiatric needs of the area or population group.

2. Methodology.

In determining whether CMHCs or other public or nonprofit private facilities meet the criteria established in paragraph C.1 of this Part, the following methodology will be used.

(a) Provision of Services to a Designated Area or Population Group.

The facility will be considered to be providing services to a designated area or population group if either:

(i) A majority of the facility's psychiatric services are being provided to residents of designated psychiatric manpower shortage areas or to population groups designated as having a shortage of psychiatric manpower; or

(ii) The population within a designated psychiatric shortage area or population group has reasonable access to psychiatric services provided at the facility. Such reasonable access will be assumed if the population lies within 40 minutes travel time of the facility and nonphysical barriers (relating to demographic and socioeconomic characteristics of the population) do not prevent the population from receiving care at the facility.

(b) Responsibility for Provision of Services.

This condition will be considered to be met if the facility, by Federal or State statute, administrative action, or contractual agreement, has been given responsibility for providing and/or coordinating psychiatric services for the area or population group, consistent with applicable State plans.

(c) Insufficient Capacity to Meet Psychiatric Needs.

A facility will be considered to have insufficient capacity to meet the psychiatric needs of the area or population it serves if:

(i) There are more than 3,000 patient visits per year per FTE psychiatrist on the staff are under care at the facility, or

(ii) No psychiatrists are on the staff and this facility is the only facility providing (or responsible for providing) services to the designated area or population.

3. Determination of Degree-of-Shortage.

Each designated facility will be assigned to the same degree-of-shortage group as the designated area or population group which it serves.

Appendix D—Criteria for Designation of Areas Having Shortages of Vision Care Manpower**Part I—Geographic Areas****A. Criteria.**

A geographic area will be designated as having a shortage of vision care manpower if the following three criteria are met:

1. The area is a rational area for the delivery of vision care services.

2. The estimated number of optometric visits supplied by vision care manpower in the area is less than the estimated requirements of the area's population for these visits, and the computed shortage is at least 1,500 optometric visits.

3. Vision care manpower in contiguous areas are excessively distant, overutilized, or inaccessible to the population of the area under consideration.

B. Methodology.

APPENDIX B

**Reporting Form for Number and Specialty of Each Practitioner,
by County Within 30 Miles of Post**

Using your coordinates (North Latitude 35° 08' 00" and West Longitude 78° 56' 00")
as the center of post, compute the exact numbers of private practitioners by county
within 30 miles of Fort Bragg.

Counties	General Dentists	Oral Surgeons	Endodontists	Orthodontists	Pediatric Dentists	Periodontists	Prosthodontists	Totals
Bladen, NC								
Chatham, NC								
Cumberland, NC								
Harnett, NC								
Hoke, NC								
Johnston, NC								
Lee, NC								
Macon, NC								
Robeson, NC								
Sampson, NC								
Scotland, NC								
Wake, NC								
TOTALS								

**END
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